**SUPPLEMENTARY TABLES**

**TABLE S1** | Species composition, occurrence frequency (OF) and density range (ind./m3) of ichthyoplankton from April to September 2019 by horizontal tows in Sansha Bay of Fujian Province, China. Species taxonomy categories followed Nelson et al. (2016). Abbr., Abbreviation; Apr., April; Jun., June; Jul., July; Aug., August; Sep., September.

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Abbr.** | **Habitat** | **Apr.** | **May** | **Jun.** | **Jul.** | **Aug.** | **Sep.** | **OF (%)** | **Egg density range (ind./m3)** | **Larva density range (ind./m3)** | **GenBank Accession number** |
| **Clupeiformes** | | | | | | | | | | | | |
| **Engraulidae** | | | | | | | | | | | | |
| *Engraulis japonicus* | Ejap | MM | 2, 3 | 2, 3 | 3 | 3 | 3 |  | 4–20 | - | 0.002–0.011 | OK012019 |
| *Setipinna tenuifilis* | Sten | AM | 3 | 1, 3 | 1, 2 | 1 | 1 |  | 32–80 | 0.001–1.937 | 0.004 | OK012055 |
| *Stolephorus commersonnii* | Scom | AM | 3 | 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 2, 3 | 20–36 | 0.001–0.450 | 0.006–0.051 | OK012058 |
| *Thryssa kammalensis* | Tkam | MM | 3 | 1, 3 |  |  |  |  | 4 | 0.008 | - | OK012061 |
| **Clupeidae** | | | | | | | | | | | | |
| *Clupanodon thrissa* | Cthr | AM | 3 | 1, 3 | 3 | 3 |  |  | 16 | 0.003–0.091 | - | OK012016 |
| *Konosirus punctatus* | Kpun | MM |  | 1, 3 |  | 3 | 3 | 3 | 16 | 0.002–0.027 | - | OK012028 |
| **Gobiiformes** | | | | | | | | | | | | |
| **Eleotridae** | | | | | | | | | | | | |
| *Butis koilomatodon* | Bkoi | AM | 3 | 3 | 3 | 3 | 2 | 2, 3 | 4–8 | - | 0.007–0.010 | OK012015 |
| **Gobiidae** | | | | | | | | | | | | |
| *Acentrogobius caninus* | Acan | AM |  |  | 2 |  |  |  | 20 | - | 0.002–0.134 | OK012007 |
| *Amblychaeturichthys hexanema* | Ahex | ES | 2, 3 | 2, 3 | 3 | 3 | 3 | 3 | 4 | - | 0.003–0.004 | OK012010 |
| *Amoya chusanensis* | Achu | ES |  |  | 2 |  | 2 |  | 8–12 | - | 0.009–0.164 | OK012011 |
| *Aulopareia unicolor* | Auni | ES |  |  |  |  | 2 | 2 | 12 | - | 0.006–0.017 | OK012012 |
| *Boleophthalmus pectinirostris* | Bpec | ES |  | 2, 3 | 2 | 2 | 2 | 2 | 4–16 | - | 0.002–0.034 | OK012014 |
| Gobiidaesp.-1 | Gobi1 | - |  |  |  | 2 |  |  | 4 | - | 0.004 | OK012021 |
| Gobiidaesp.-2 | Gobi2 | - |  |  |  |  | 2 | 2 | 4–12 | - | 0.006–0.019 | OK012022 |
| *Mugilogobius abei* | Mabe | ES |  | 2 |  |  |  |  | 4 | - | 0.006 | OK012031 |
| *Odontamblyopus lacepedii* | Olac | ES | 3 | 3 | 2, 3 | 3 |  |  | 12 | - | 0.010–0.029 | OK012034 |
| *Oxuderces dentatus* | Odent | AM |  |  |  |  | 2 | 2 | 4–16 | - | 0.010–0.024 | OK012036 |
| *Parachaeturichthys polynema* | Ppol | ES | 3 | 2, 3 | 3 | 2, 3 | 3 | 3 | 4–16 | - | 0.003–0.024 | OK012039 |
| *Periophthalmus modestus* | Pmod | AM |  | 1, 2 | 2 |  | 2 | 2 | 12–32 | 0.005 | 0.002–0.042 | OK012041 |
| *Pseudogobius* sp. | Pseu | - |  |  | 2 |  |  |  | 4 | - | 0.005 | OK012046 |
| *Rhinogobius* sp. | Rhin | - | 2 |  |  |  |  |  | 12 | - | 0.004–0.036 | OK012050 |
| *Rhinogobius giurinus* | Rgiu | AM |  |  | 2 |  |  |  | 4–8 | - | 0.006–0.008 | OK012049 |
| *Scartelaos gigas* | Sgig | ES |  |  | 2 |  |  |  | 4 | - | 0.004 | OK012051 |
| *Taenioides anguillaris* | Tang | AM |  |  | 2 |  | 2 | 2 | 4–16 | - | 0.006–0.029 | OK012059 |
| *Tridentiger barbatus* | Tbar | ES | 3 | 2, 3 | 2, 3 | 3 | 3 | 3 | 8–12 | - | 0.002–0.136 | OK012062 |
| *Tridentiger bifasciatus* | Tbif | AM | 2, 3 | 2, 3 | 2 |  |  |  | 4–36 | - | 0.003–0.153 | OK012063 |
| *Tridentiger trigonocephalus* | Ttri | AM |  | 2 |  |  |  |  | 12 | - | 0.002–0.009 | OK012064 |
| *Trypauchen vagina* | Tvag | AM | 3 | 3 | 2, 3 | 3 | 3 | 3 | 12 | - | 0.008–0.117 | OK012065 |
| **Ambassidae** | | | | | | | | | | | | |
| *Ambassis gymnocephalus* | Agym | AM | 3 | 1, 3 | 1 |  | 2 | 2,3 | 8 | 0.004–0.683 | 0.017–0.072 | OK012009 |
| **Mugiliformes** | | | | | | | | | | | | |
| **Mugilidae** | | | | | | | | | | | | |
| *Planiliza affinis* | Paff | ES | 1 | 2, 3 |  |  |  |  | 4–12 | 0.003–0.004 | 0.002 | OK012044 |
| *Planiliza haematocheila* | Phae | CA | 1 |  |  |  |  |  | 8 | 0.013–0.026 | - | OK012043 |
| **Blenniformes** | | | | | | | | | | | | |
| **Blenniidae** | | | | | | | | | | | | |
| Blenniidae sp. | Blen | - |  | 2 | 2 | 2 |  |  | 4–16 | - | 0.004–0.008 | OK012013 |
| *Omobranchus punctatus* | Opun | ES |  | 2 | 2 | 2 |  |  | 4–28 | - | 0.004–0.059 | OK012035 |
| *Parablennius yatabei* | Pyat | MM |  | 2 |  |  |  |  | 4 | - | 0.005 | OK012038 |
| **Beloniformes** | | | | | | | | | | | | |
| **Hemiramphidae** | | | | | | | | | | | | |
| *Hyporhamphus* sp. | Hypo | - |  | 2 | 2 |  |  |  | 8 | - | 0.004–0.010 | OK012027 |
| **Carangiformes** | | | | | | | | | | | | |
| **Rachycentridae** | | | | | | | | | | | | |
| *Rachycentron canadum* | Rcan | MM |  |  |  |  | 1 | 1 | 4–12 | 0.013–0.058 | - | OK012047 |
| **Pleuronectiformes** | | | | | | | | | | | | |
| **Soleidae** | | | | | | | | | | | | |
| *Solea ovata* | Sova | MN | 1, 3 | 1, 3 | 3 |  |  | 3 | 16–84 | 0.005–1.365 | - | OK012056 |
| **Cynoglossidae** | | | | | | | | | | | | |
| *Cynoglossus joyneri* | Cjoy | MN |  | 1 | 1 | 1 | 1 |  | 8–32 | 0.002–0.088 | - | OK012018 |
| **Syngnathiformes** | | | | | | | | | | | | |
| **Syngnathidae** | | | | | | | | | | | | |
| *Hippichthys* sp. | Hipp | - |  |  |  |  |  | 2 | 4 | - | 0.007 | OK012026 |
| **Scombriformes** | | | | | | | | | | | | |
| **Scombridae** | | | | | | | | | | | | |
| *Scomberomorus niphonius* | Snip | MM | 1 | 1, 3 | 3 |  |  |  | 16–48 | 0.002–0.227 | - | OK012053 |
| **Labriformes** | | | | | | | | | | | | |
| **Labridae** | | | | | | | | | | | | |
| *Halichoeres tenuispinis* | Hten | MN |  |  | 1 |  |  |  | 8 | 0.002 | - | OK012023 |
| **Perciformes** | | | | | | | | | | | | |
| **Terapontidae** | | | | | | | | | | | | |
| *Pelates quadrilineatus* | Pqua | AM | 3 | 2, 3 |  |  | 3 |  | 8 | - | 0.002–0.003 | OK012040 |
| **Serranidae** | | | | | | | | | | | | |
| *Epinephelus akaara* | Eaka | MN |  | 3 | 1, 3 |  |  |  | 40 | 0.004–0.062 | - | OK012020 |
| **Leiognathidae** | | | | | | | | | | | | |
| *Nuchequula nuchalis* | Nnuc | AM | 1, 3 | 1, 3 | 1, 3 |  |  |  | 20–100 | 0.001–1.115 | - | OK012033 |
| *Photopectoralis bindus* | Pbin | AM |  |  |  |  | 1, 2 | 2 | 48–76 | 0.015–0.986 | 0.006–0.196 | OK012042 |
| **Haemulidae** | | | | | | | | | | | | |
| *Hapalogenys analis* | Hana | MN | 3 | 1, 3 | 1, 3 | 1, 3 | 3 | 1, 3 | 4–12 | 0.001–0.046 | - | OK012024 |
| *Hapalogenys nigripinnis* | Hnig | ES | 3 | 3 | 3 | 3 | 3 | 1 | 20 | 0.058–0.156 | - | OK012025 |
| **Scorpaeniformes** | | | | | | | | | | | | |
| **Scorpaenidae** | | | | | | | | | | | | |
| *Sebastiscus marmoratus* | Smar | MM | 1, 3 | 3 | 3 | 3 | 3 | 3 | 8 | 0.011 | - | OK012054 |
| **Platycephalidae** | | | | | | | | | | | | |
| *Platycephalus indicus* | Pind | MM |  | 2, 3 | 3 | 3 | 3 | 3 | 4 | - | 0.005 | OK012045 |
| **Acanthuriformes** | | | | | | | | | | | | |
| **Sciaenidae** | | | | | | | | | | | | |
| *Collichthys lucidus* | Cluc | MM | 3 | 1, 3 | 1, 3 | 3 | 1, 3 | 3 | 12–64 | 0.004–0.754 | - | OK012017 |
| *Larimichthys crocea* | Lcro | MM | 1, 3 | 1, 2, 3 | 1, 3 | 3 | 3 | 3 | 8–36 | 0.001–0.370 | 0.008 | OK012029 |
| *Nibea albiflora* | Nalb | MM | 1, 3 | 1, 3 | 1, 3 | 1, 3 | 1, 3 | 1, 2, 3 | 24–100 | 0.002–10.952 | 0.009–0.015 | OK012032 |
| *Sciaenops ocellatus* | Soce | MM |  | 3 |  |  | 1 | 1 | 4 | 0.007–0.037 | - | OK012052 |
| **Spariformes** | | | | | | | | | | | | |
| **Sparidae** | | | | | | | | | | | | |
| *Acanthopagrus schlegelii* | Asch | MM | 1, 3 | 1, 2, 3 | 3 | 1, 3 | 3 |  | 12–80 | 0.002–3.056 | 0.002–0.003 | OK012006 |
| *Pagrus major* | Pmaj | MM | 1, 2, 3 | 1 |  | 3 | 3 | 3 | 68–76 | 0.002–9.000 | 0.004 | OK012037 |
| *Rhabdosargus sarba* | Rsar | MM | 2, 3 | 3 | 3 | 3 | 3 |  | 8 | - | 0.002–0.004 | OK012048 |
| *Sparus aurata* | Saur | MM |  | 3 | 2, 3 |  | 3 | 3 | 24 | - | 0.008–0.095 | OK012057 |
| **Tetraodontiformes** | | | | | | | | | | | | |
| **Tetraodontidae** | | | | | | | | | | | | |
| *Takifugu xanthopterus* | Txan | MN |  | 2 |  |  | 3 | 3 | 20 | - | 0.002–0.010 | OK012060 |

1: fish egg; 2: larva; 3: juvenile and/or adult collected at the same periods from fixed nets in the same surveyed area (data not shown).

AM, amphidromous; CA, catadromous; ES, estuarine species; MM, marine migrant; MN, marine neritic

**TABLE S2** | Species composition of ichthyoplankton from April to September 2019 by vertical tows in Sansha Bay of Fujian Province, China. Species taxonomy categories followed Nelson et al. (2016).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Abbreviation** | **April** | **May** | **June** | **July** | **August** | **September** | **GenBank Accession number** |
| **Clupeiformes** | | | | | | | | |
| **Engraulidae** | | | | | | | | |
| *Setipinna tenuifilis* | Sten |  | 1 | 1 | 1 | 1 |  | OK012055 |
| *Stolephorus commersonnii* | Scom |  |  |  |  |  | 1 | OK012058 |
| **Gobiiformes** | | | | | | | | |
| **Eleotridae** | | | | | | | | |
| *Butis koilomatodon* | Bkoi |  |  |  |  | 2 |  | OK012015 |
| **Gobiidae** | | | | | | | | |
| *Acentrogobius* sp.*\** | Avig |  |  |  |  | 2 | 2 | OK012008 |
| *Amoya chusanensis* | Achu |  |  |  |  | 2 |  | OK012011 |
| *Aulopareia unicolor* | Auni |  |  |  |  |  | 2 | OK012012 |
| *Boleophthalmus pectinirostris* | Bpec |  | 2 |  | 2 |  |  | OK012014 |
| *Parachaeturichthys polynema* | Ppol |  | 2 |  |  |  |  | OK012039 |
| *Periophthalmus modestus* | Pmod |  | 2 | 2 |  | 2 | 2 | OK012041 |
| *Rhinogobius* sp. | Rhin |  |  |  |  |  | 2 | OK012050 |
| *Rhinogobius giurinus* | Rgiu |  |  | 2 |  |  |  | OK012049 |
| *Scartelaos gigas* | Sgig |  |  | 2 |  |  |  | OK012051 |
| *Taenioides anguillaris* | Tang |  |  |  |  | 2 | 2 | OK012059 |
| *Tridentiger bifasciatus* | Tbif |  | 2 | 2 |  |  |  | OK012063 |
| *Tridentiger trigonocephalus* | Ttri |  | 2 |  |  |  |  | OK012064 |
| *Trypauchen vagina* | Tvag |  |  |  | 2 |  |  | OK012065 |
| **Blenniformes** | | | | | | | | |
| **Blenniidae** | | | | | | | | |
| Blenniidae sp. | Blen |  |  |  | 2 |  |  | OK012013 |
| **Pleuronectiformes** | | | | | | | | |
| **Soleidae** | | | | | | | | |
| *Solea ovata* | Sova |  | 1 |  |  |  |  | OK012056 |
| **Cynoglossidae** | | | | | | | | |
| *Cynoglossus joyneri* | Cjoy |  |  | 1 |  |  |  | OK012018 |
| **Syngnathiformes** | | | | | | | | |
| **Syngnathidae** | | | | | | | | |
| *Hippichthys* sp*.* | Hipp |  |  |  |  | 2 |  | OK012026 |
| **Scombriformes** | | | | | | | | |
| **Scombridae** | | | | | | | | |
| *Scomberomorus niphonius* | Snip | 1 |  |  |  |  |  | OK012053 |
| **Perciformes** | | | | | | | | |
| **Lateolabracidae** | | | | | | | | |
| *Lateolabrax japonicus\** | Ljap | 2 |  |  |  |  |  | OK012030 |
| **Serranidae** | | | | | | | | |
| *Epinephelus akaara* | Eaka |  |  | 1 |  |  |  | OK012020 |
| **Leiognathidae** | | | | | | | | |
| *Nuchequula nuchalis* | Nnuc |  | 1 |  |  |  |  | OK012033 |
| *Photopectoralis bindus* | Pbin |  |  |  |  | 1 |  | OK012042 |
| **Acanthuriformes** | | | | | | | | |
| **Sciaenidae** | | | | | | | | |
| *Collichthys lucidus* | Cluc |  | 1 | 1 |  |  |  | OK012017 |
| *Larimichthys crocea* | Lcro |  | 1 |  |  |  |  | OK012029 |
| *Nibea albiflora* | Nalb | 1 | 1 | 1 | 1, 2 |  | 1 | OK012032 |
| **Spariformes** | | | | | | | | |
| **Sparidae** | | | | | | | | |
| *Acanthopagrus schlegelii* | Asch |  | 1 |  |  |  |  | OK012006 |
| *Pagrus major* | Pmaj | 1 | 1 |  |  |  |  | OK012037 |
| *Rhabdosargus sarba* | Rsar | 2 |  |  |  |  |  | OK012048 |

1: fish egg; 2: larva; \*: species only collected in vertical tows.

**TABLE S3 |** Comparisons of the assemblage structures according to one-way ANOSIM from April to September 2019 in Sansha Bay of Fujian Province, China.

|  |  |  |
| --- | --- | --- |
| **Assemblages** | **R values** | **Significant level (p-value)** |
| April vs May | 0.583 | 0.001 |
| April vs June | 0.913 | 0.001 |
| April vs July | 0.750 | 0.001 |
| April vs August | 0.803 | 0.001 |
| April vs September | 0.714 | 0.001 |
| May vs June | 0.706 | 0.001 |
| May vs July | 0.764 | 0.001 |
| May vs August | 0.847 | 0.001 |
| May vs September | 0.787 | 0.001 |
| June vs July | 0.774 | 0.001 |
| June vs August | 0.765 | 0.001 |
| June vs September | 0.729 | 0.001 |
| July vs August | 0.397 | 0.001 |
| July vs September | 0.462 | 0.001 |
| August vs September | 0.019 | 0.185 |

R values close to 1 indicate a large difference in assemblages, and to 0 indicate a little difference in assemblages.

手机屏幕截图

中度可信度描述已自动生成

**FIGURE S1** | Images of some ichthyoplankton specimens (species taxonomy category referred to Table S1). Scale bars: = 500 μm.